

CLAIMS

1. Thermal spray powder, characterised in that it is based on silicon carbide (SiC) and contains at least one boride chosen from the group comprising zirconium boride (ZrB_2), titanium boride (TiB_2) and hafnium boride (HfB_2).
5. 2. Thermal spray powder as in claim 1, characterised in that said boride is present between 5% and 40% in weight.
3. Thermal spray powder as in claim 2, in which the weight percentage of said boride is between 10 and 25.
4. Thermal spray powder according to claim 1 characterised in that it is in the 10 form of spherical particles with diameter between 10 and 150 μm .
5. Thermal spray powder as in claim 4, in the form of spherical particles with diameter between 20 and 80 μm .
6. Process for preparation of the thermal spray powder as in claim 1, characterised in that a SiC powder and powders of at least one boride chosen 15 from Zr, Ti and/or Hf borides are mixed and aggregated.
7. Process for preparation of the thermal spray powder as in claim 6, in which the SiC and ZrB_2 , TiB_2 and/or HfB_2 powders are mixed and aggregated by means of the spray dryer technique, followed by sintering if necessary.
8. Method for the preparation of a composite material with metallic or non- 20 metallic substrate and SiC-based coating, characterised in that a thermal spray powder according to claim 1 is deposited on said substrate by means of the plasma spraying technique.
9. Composite material, characterised in that it is prepared by means of the method in claim 8.
25. 10. Material with high resistance to wear, corrosion, erosion and high temperature, characterised in that it is prepared from the composite material of claim 9 by removal of said substrate by machining or chemical etching.